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Ji et al.

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(54) **OXYGEN MIXING VALVE**

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See application file for complete search history.

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(57) **ABSTRACT**

An oxygen mixing valve comprises a valve body. The valve body has an oxygen inlet, an air inlet, and a gas mixture outlet. A mixing chamber in communication with the gas mixture outlet, an oxygen chamber in communication with the oxygen inlet, and an air chamber in communication with the air inlet are disposed in the valve body. A first guide seat is elastically disposed in the oxygen chamber, and a second guide seat is elastically disposed in the air chamber. A first ball and a second ball are respectively disposed at inner ends of the first guide seat and the second guide seat. The first ball and the second ball are connected through a ball mandril. A mandril is movably disposed at an outer end of the first guide seat, a bearing capable of rotating is disposed at an outer side of the mandril, an involute cam is disposed at an outer side of the bearing, and the involute cam is connected to an output shaft of a stepper motor. The oxygen mixing valve has advantages of simple structure, convenient mounting and maintenance, low manufacturing cost, capability of sensitively and precisely adjusting the ratio of the oxygen to air, and capability of controlling the tidal volume in conjunction with a common proportional valve.

13 Claims, 7 Drawing Sheets

